



Realisation of the European Flood Directive in Saxony-Anhalt

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Landesbetrieb
für Hochwasserschutz
und Wasserwirtschaft
Sachsen-Anhalt

Overview

- 1. REVIEW of the Flood 2013**
- 2. CONCEPT of the EFD in Saxony-Anhalt**
- 3. RESULTS of the EFD in Saxony-Anhalt**

Schedule of the European Flood Directive (EFD)



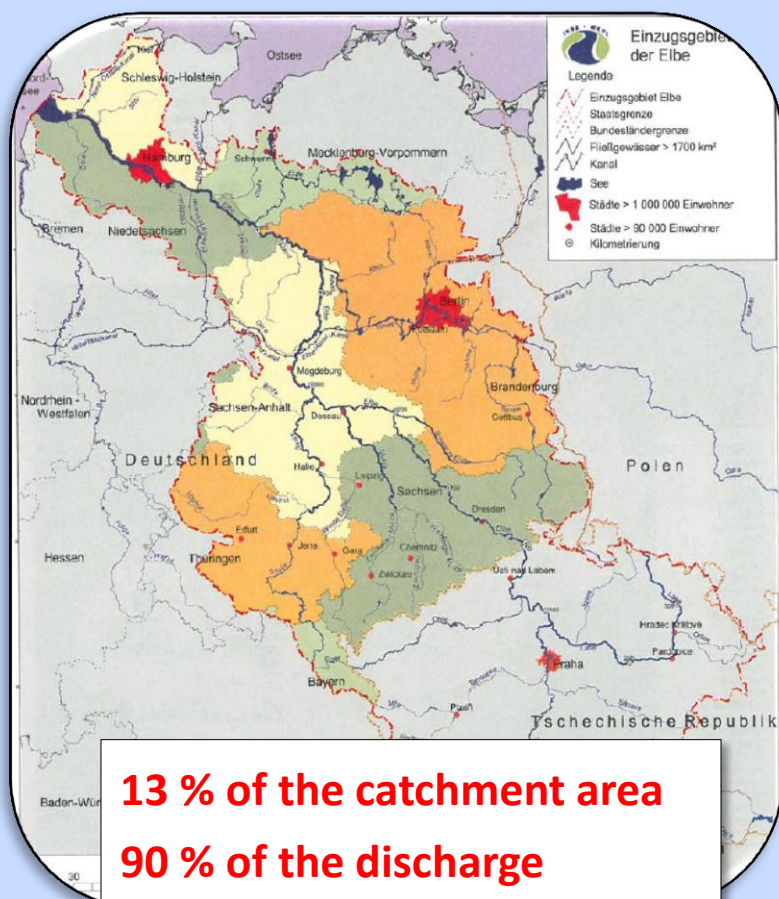
*First review 2018

FLOOD 2013



FLOOD 2013

Saxony-Anhalt in the Elbe catchment area

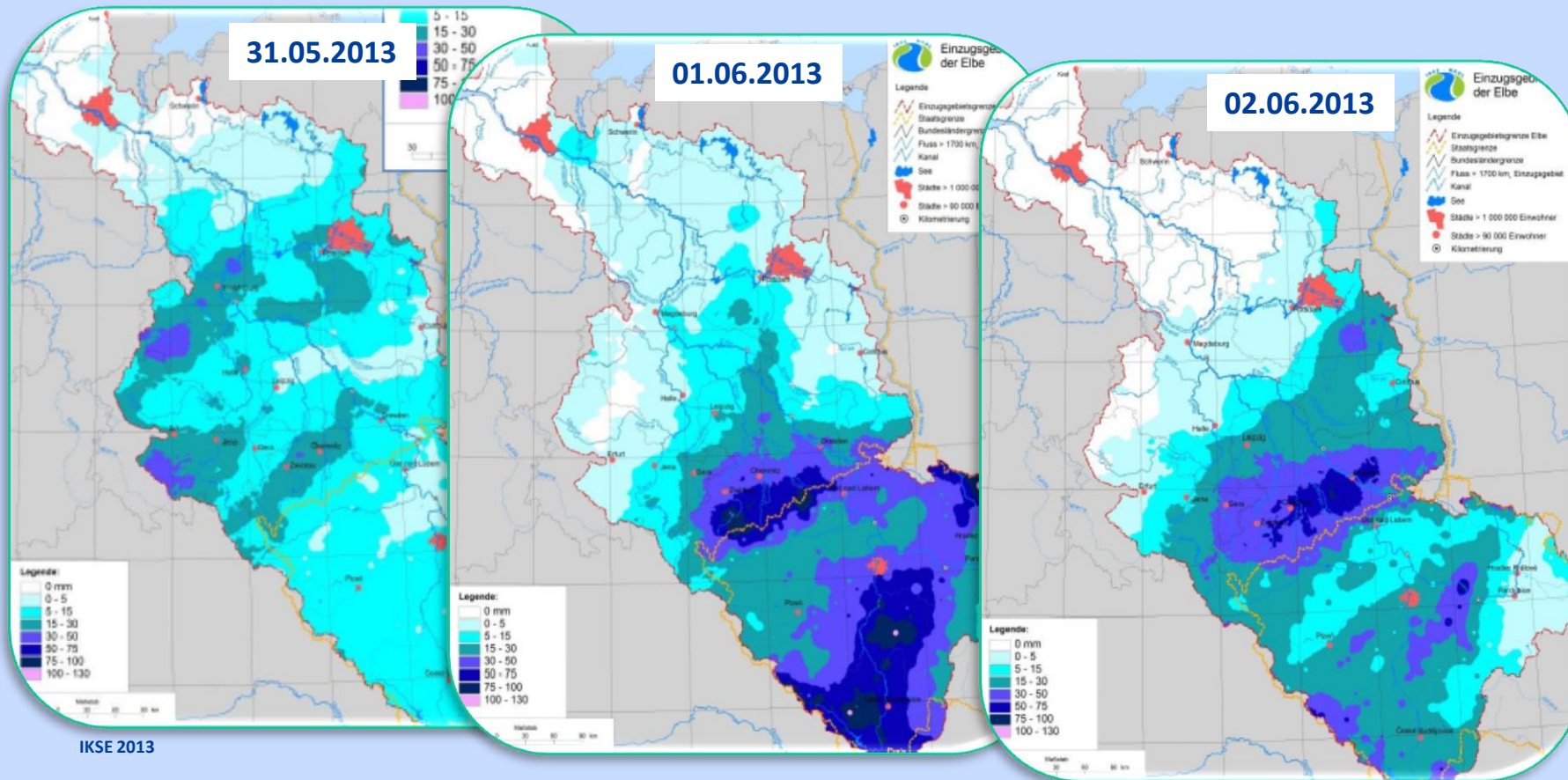


IKSE 2009



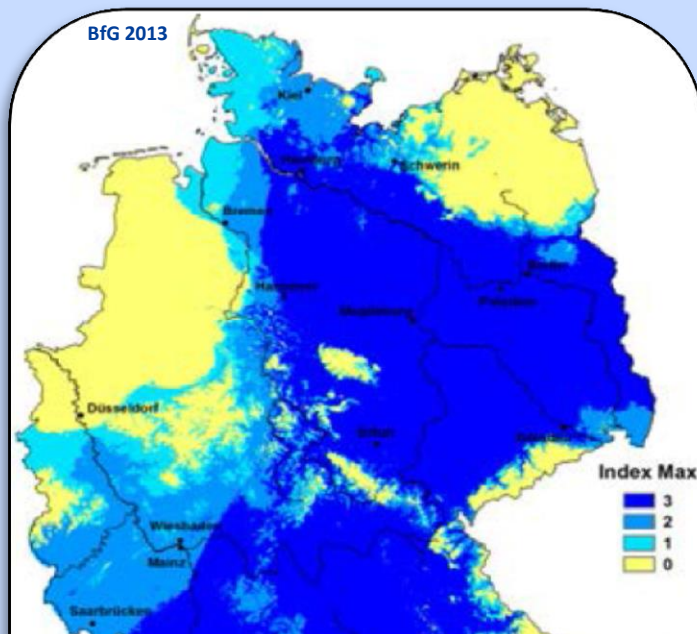
FLOOD 2013

Meteorological situation => low pressure area over eastern central Europe



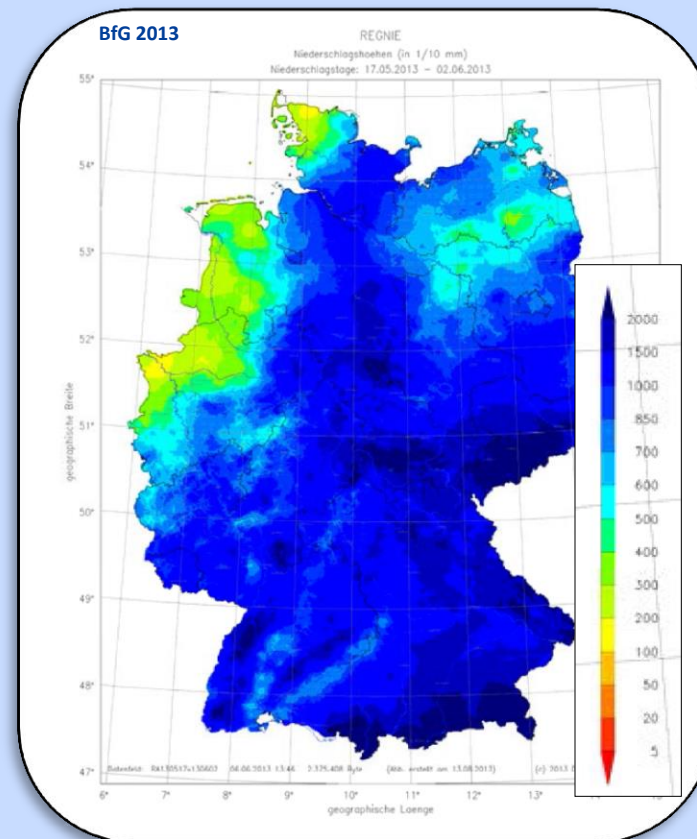
FLOOD 2013

Hydrological situation => highest values of soil moisture and extreme rainfalls



- 0 – no new maximum of soil moisture
- 1 – third highest value of soil moisture
- 2 – second highest value of soil moisture
- 3 – new maximum of soil moisture (40 % of Germany)**

Extreme values of soil moisture at the 31.05.2013
compared with values from 1962-2012 (31.05.)



Sum of daily precipitation from
17.05. to 02.06.2013 (1/10mm)

FLOOD 2013

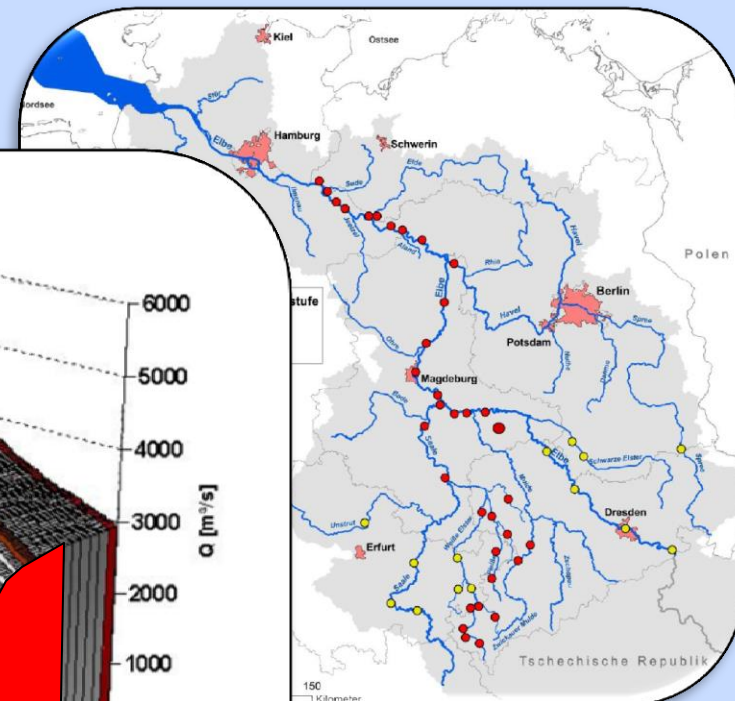
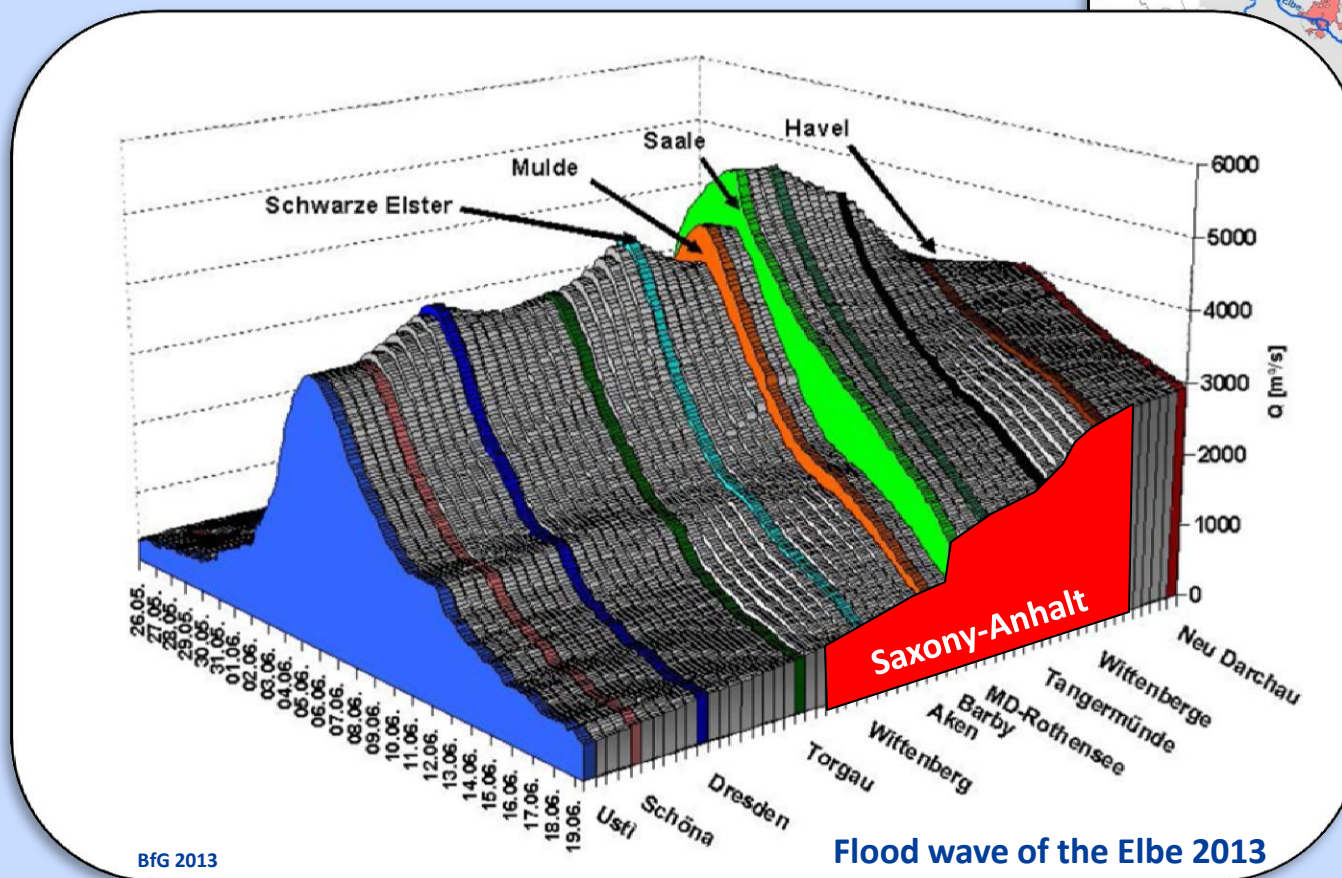
***Combination of high soil moisture values AND
an extreme wet weather period AS WELL AS
a full vegetation in the floodplain areas.***



Rest of vegetation stopped (up to 4m high) by local trees and bushes (10/2013)

FLOOD 2013

Nearly all gauging stations along the Elbe river in Saxony-Anhalt with new maximum values.

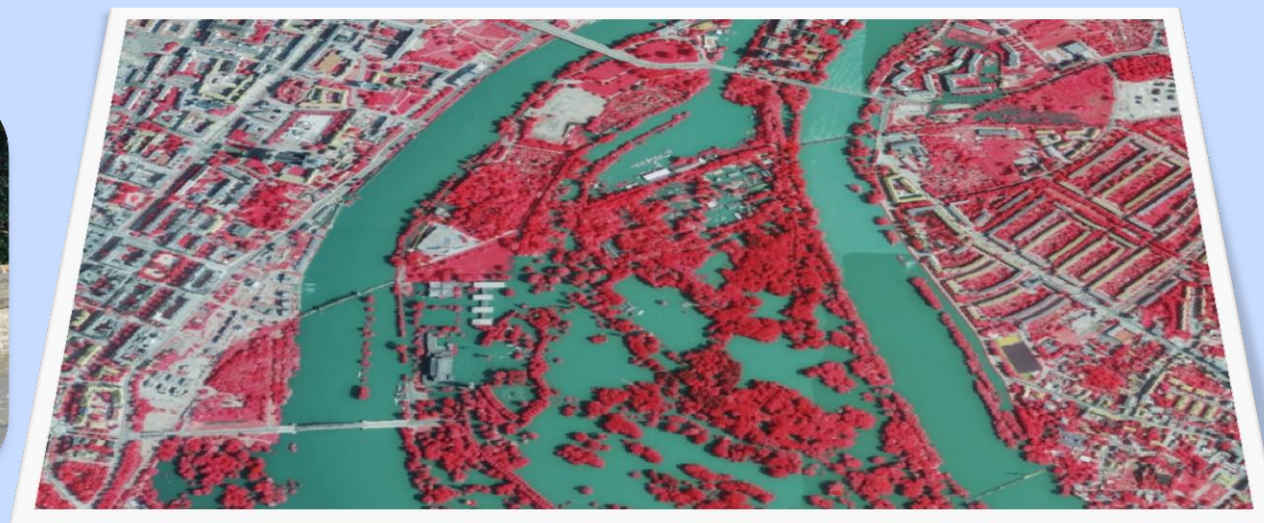
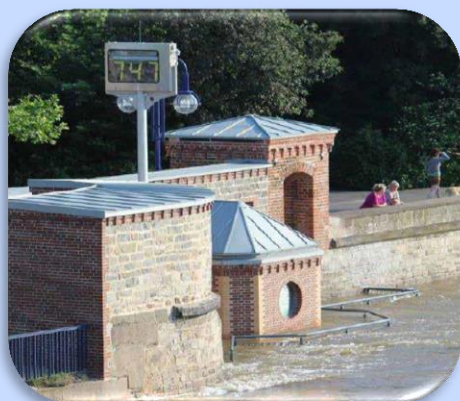


- new highest flood level
- highest alarm level

Flood wave of the Elbe 2013

FLOOD 2013

Magdeburg, capital of Saxony-Anhalt, got a new maximum water level with 0.67 m more than the historical peak.

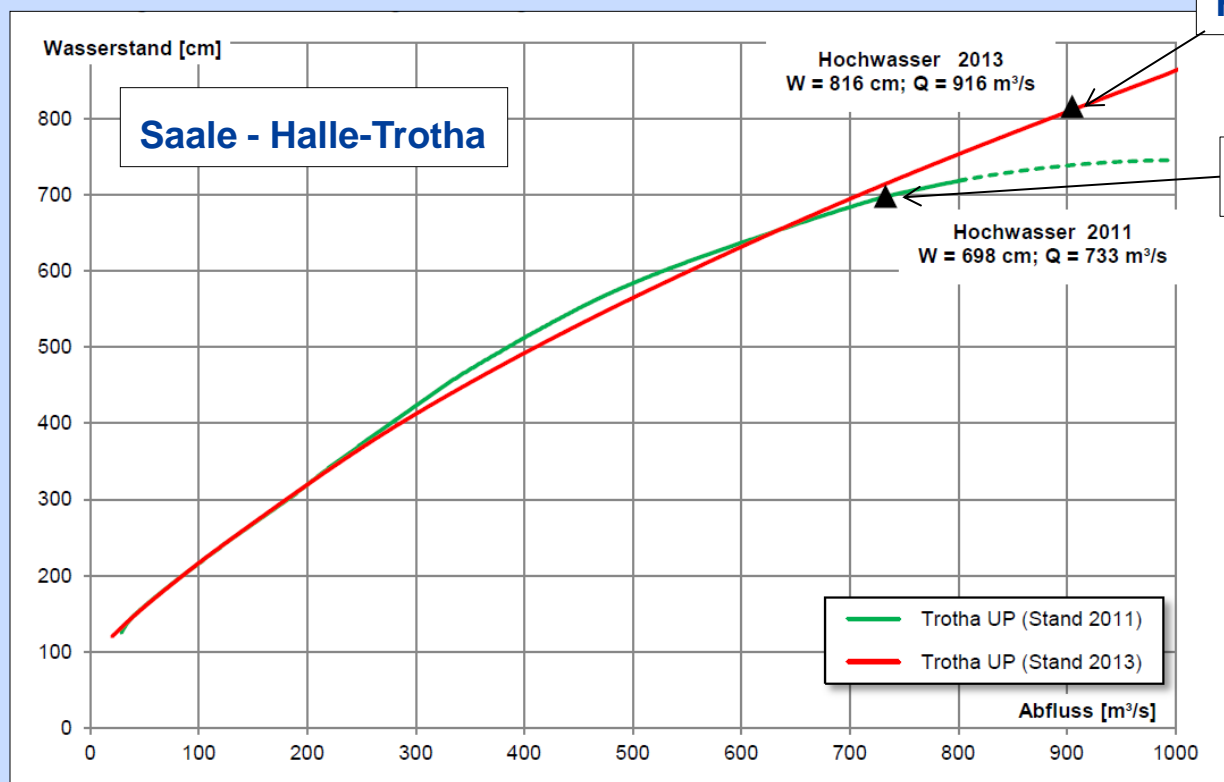


STATION	MAXIMUM BEFORE 2013 [m]	MAXIMUM 2013 [m]	DIFFERENCE [m]
Wittenberge	7.34	7.85	+ 0.51
Tangermünde	7.68	8.36	+ 0.68
Magdeburg	6.80	7.47	+ 0.67
Dessau	7.16	7.45	+ 0.29

FLOOD 2013

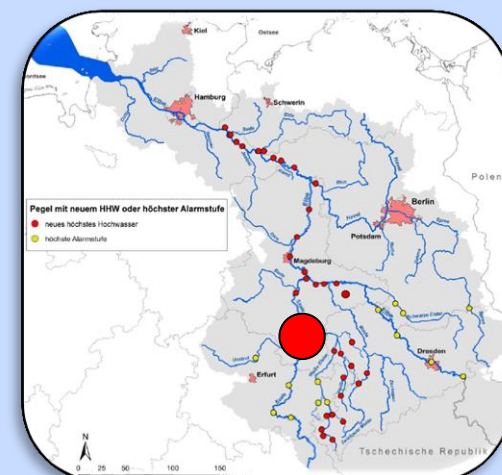
Relation of discharge and water level have to be evaluated

Full vegetation in the floodplains increased the water level.



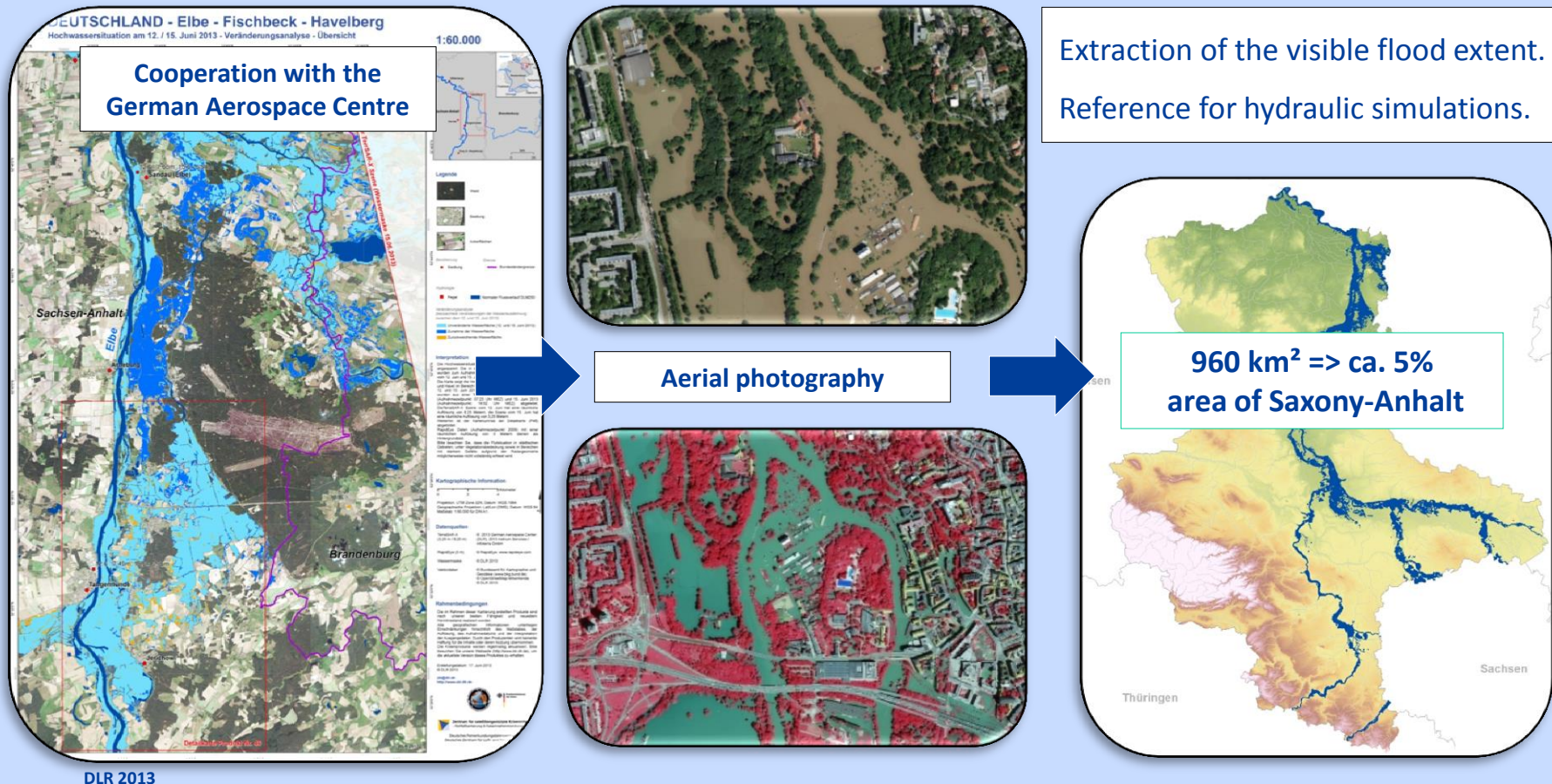
Flood in summer 06/2013

Flood in winter 01/2011



FLOOD 2013

Recording of the flood extent by remote sensing methods



FLOOD 2013

Fischbeck dike breach with a flooding of approx. 150 km² and evacuations of towns up to 30km away, which was finally closed by sunken barges.



Closure of a 100m gap by three sunken barges to reduce the flow velocity as basis for filling the breach.



FLOOD 2013

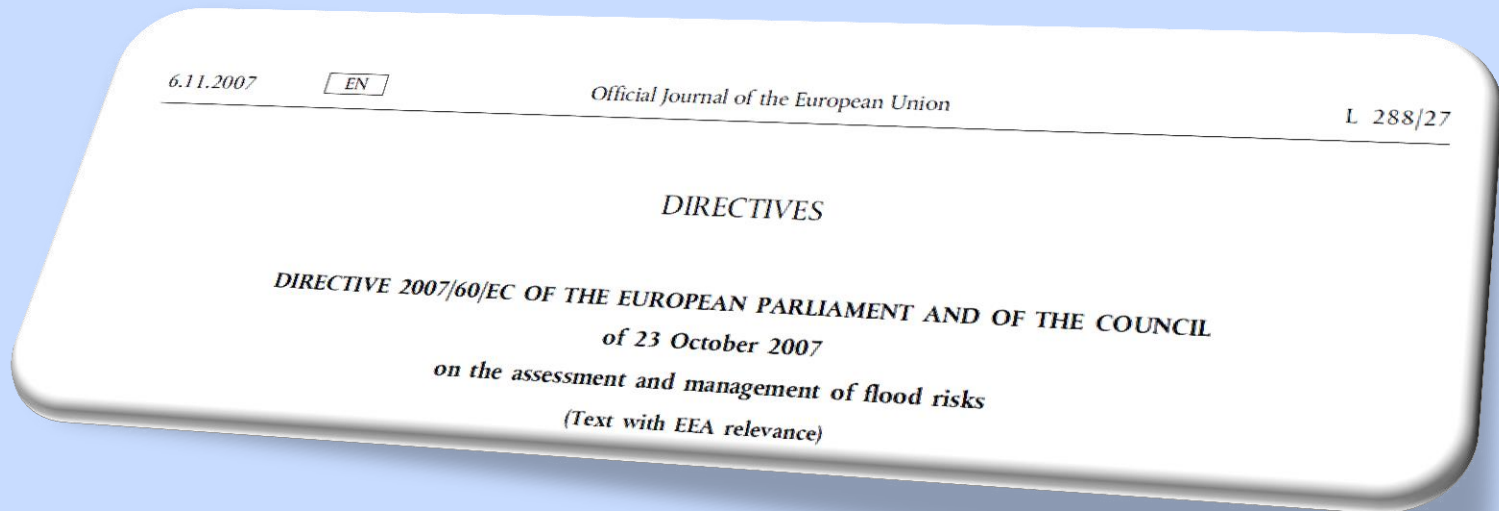
Organisation, support and managing of flood defense measures in the operational flood management.



www.mz-web.de

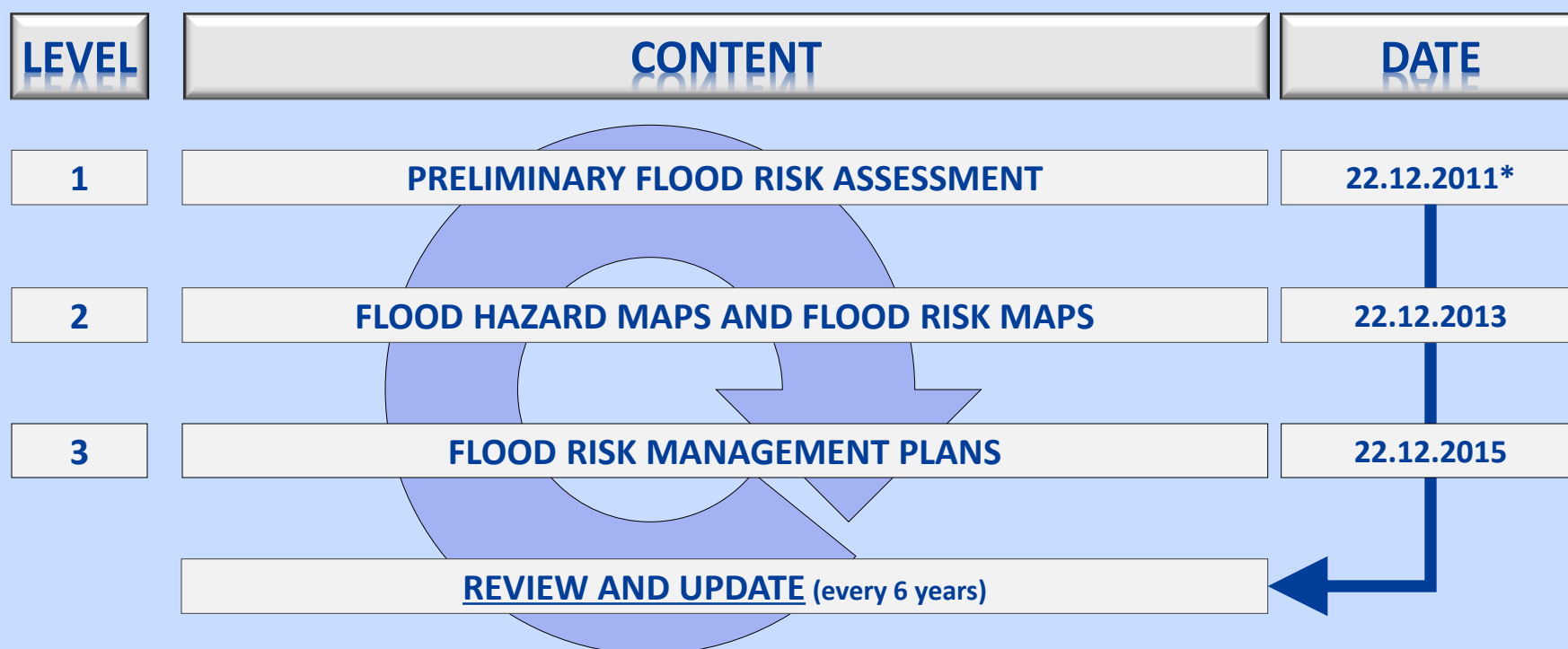
Don't forget social networks and public media streams!!!

CONCEPTION of the EFD in Saxony-Anhalt



CONCEPTION of the EFD in Saxony-Anhalt

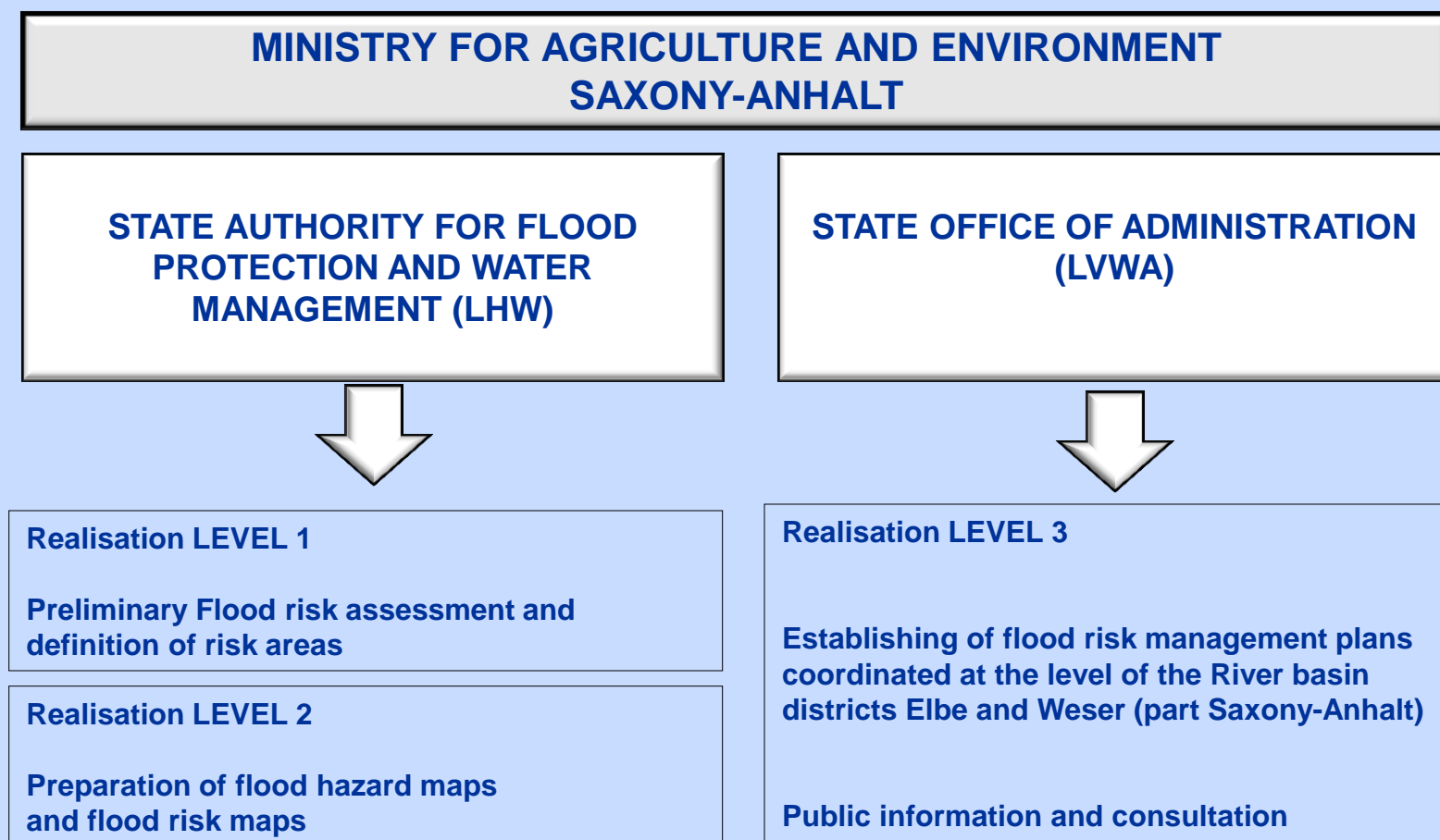
Schedule



*First review 2018

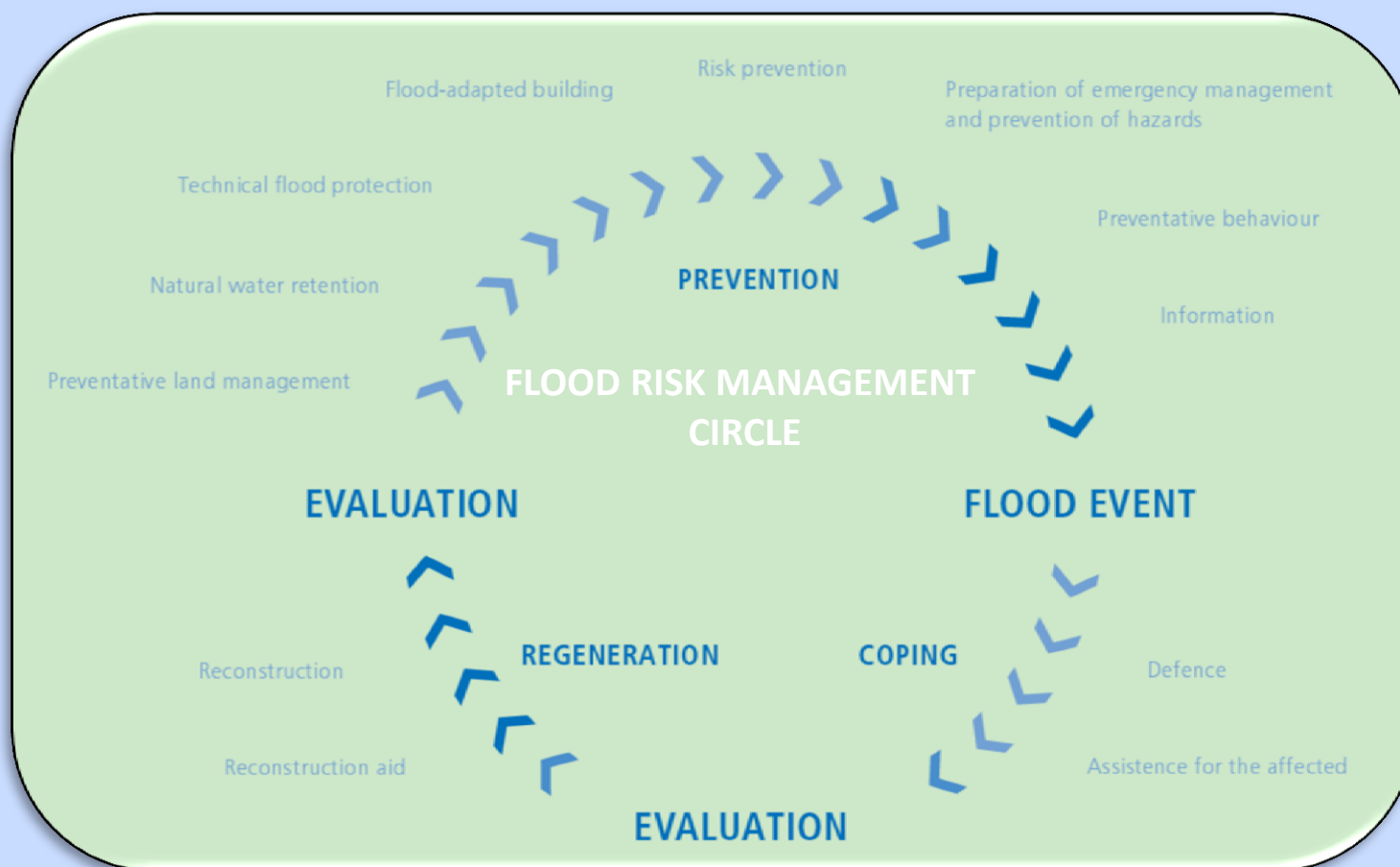
CONCEPTION of the EFD in Saxony-Anhalt

Administration



CONCEPT of the EFD in Saxony-Anhalt

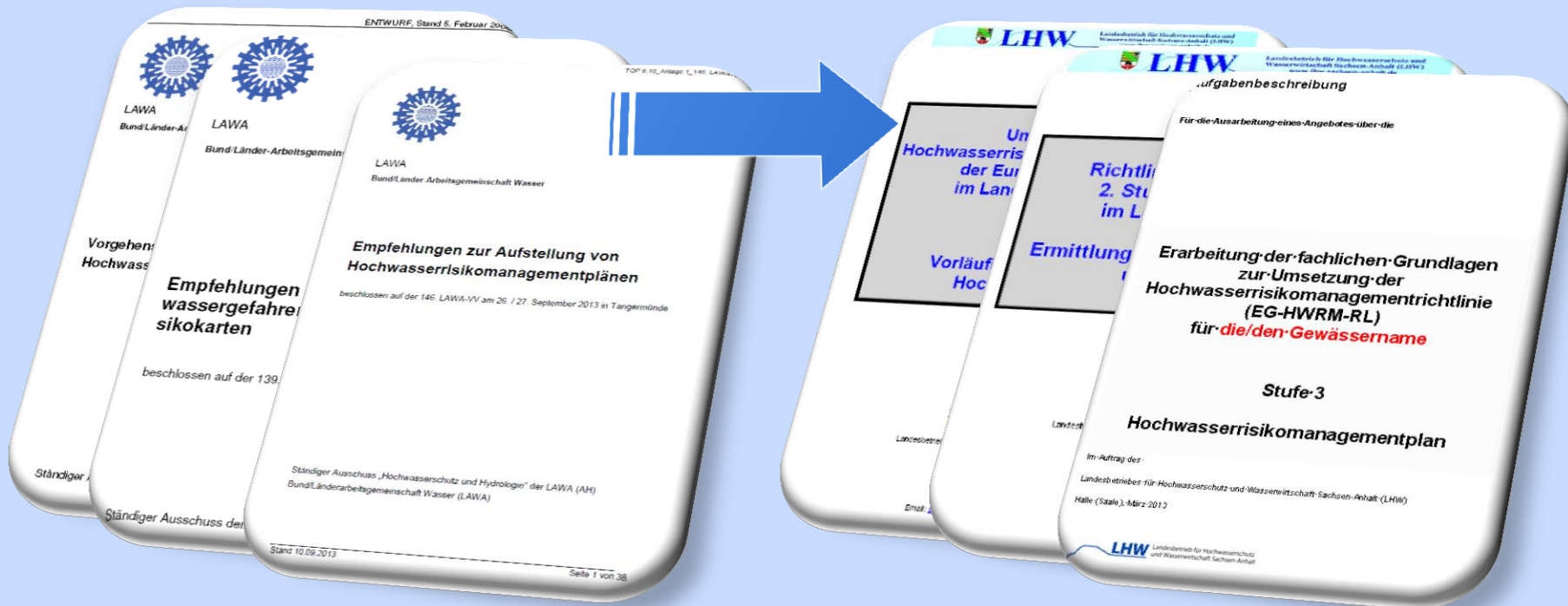
Realisation corresponding to the Flood Risk Circle



CONCETPTION of the EFD in Saxony-Anhalt

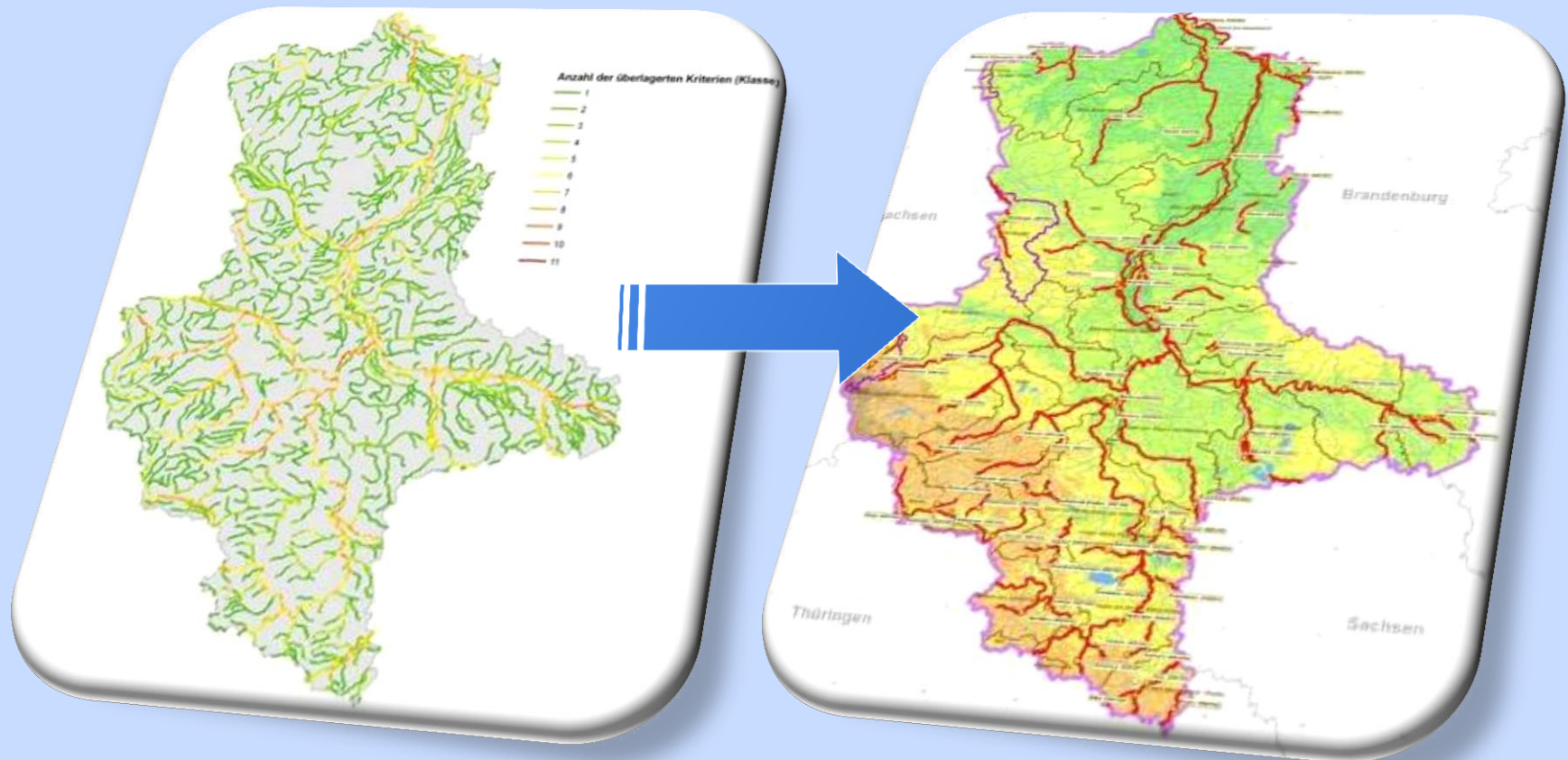
Realisation corresponding to the references of LAWA

LAWA => German Working Group on water issues of the Federal States and the Federal Government represented by the Federal Environment Ministry.



RESULTS of the EFD in Saxony-Anhalt

LEVEL 1 - PRELIMINARY FLOOD RISK ASSESSMENT



Overlay of relevant criterias with the result of 67 streams with a length of 1.865km

RESULTS of the EFD in Saxony-Anhalt

LEVEL 2 - FLOOD HAZARD MAPS AND FLOOD RISK MAPS

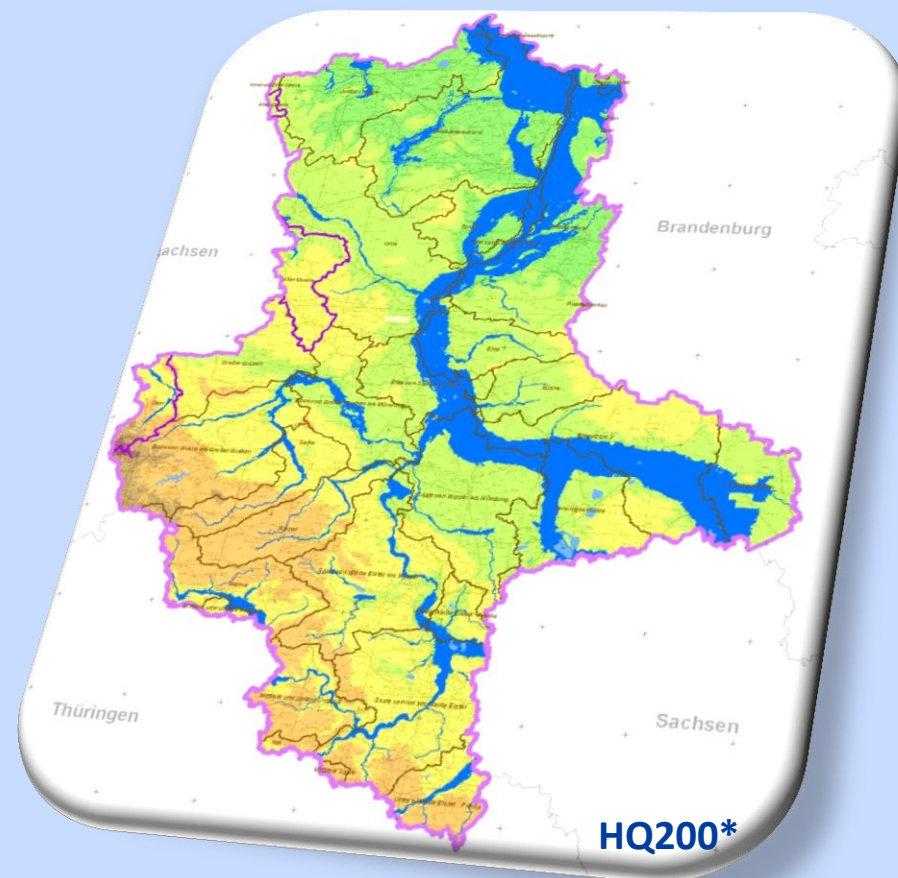
SCENARIOS:

PROBABILITY	INTERVAL (years)
Low	200*
Medium	100
High	10 / 20**

* without flood protection measures

** Elbe

PROBABILITY	FLOODED AREA
Low	~ 3.500 km ²
Medium	~ 1.200 km ²
High	~ 900 km ²

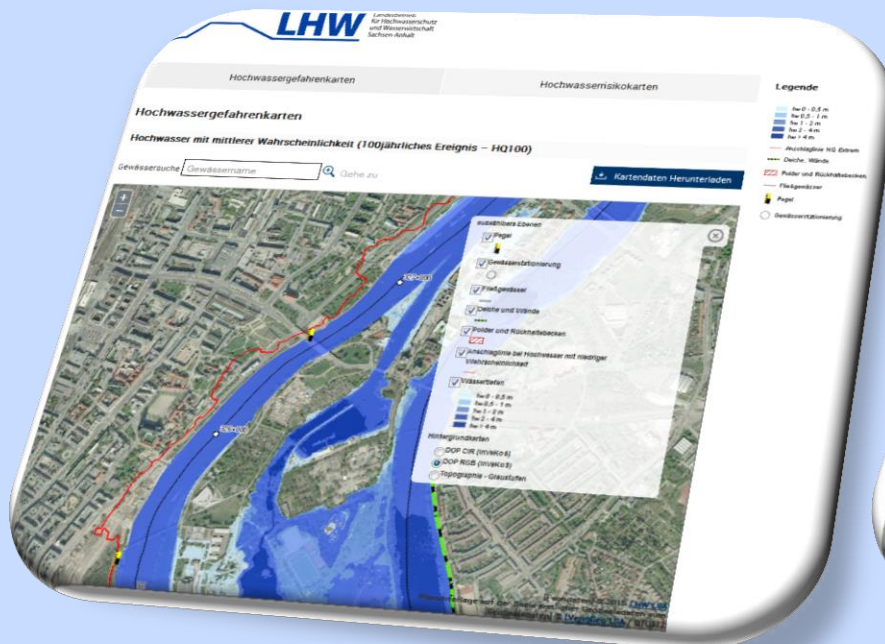


RESULTS of the EFD in Saxony-Anhalt

LEVEL 2 - FLOOD HAZARD MAPS AND FLOOD RISK MAPS

Announcement of the Risk and Hazard Maps for the general public via internet/ app

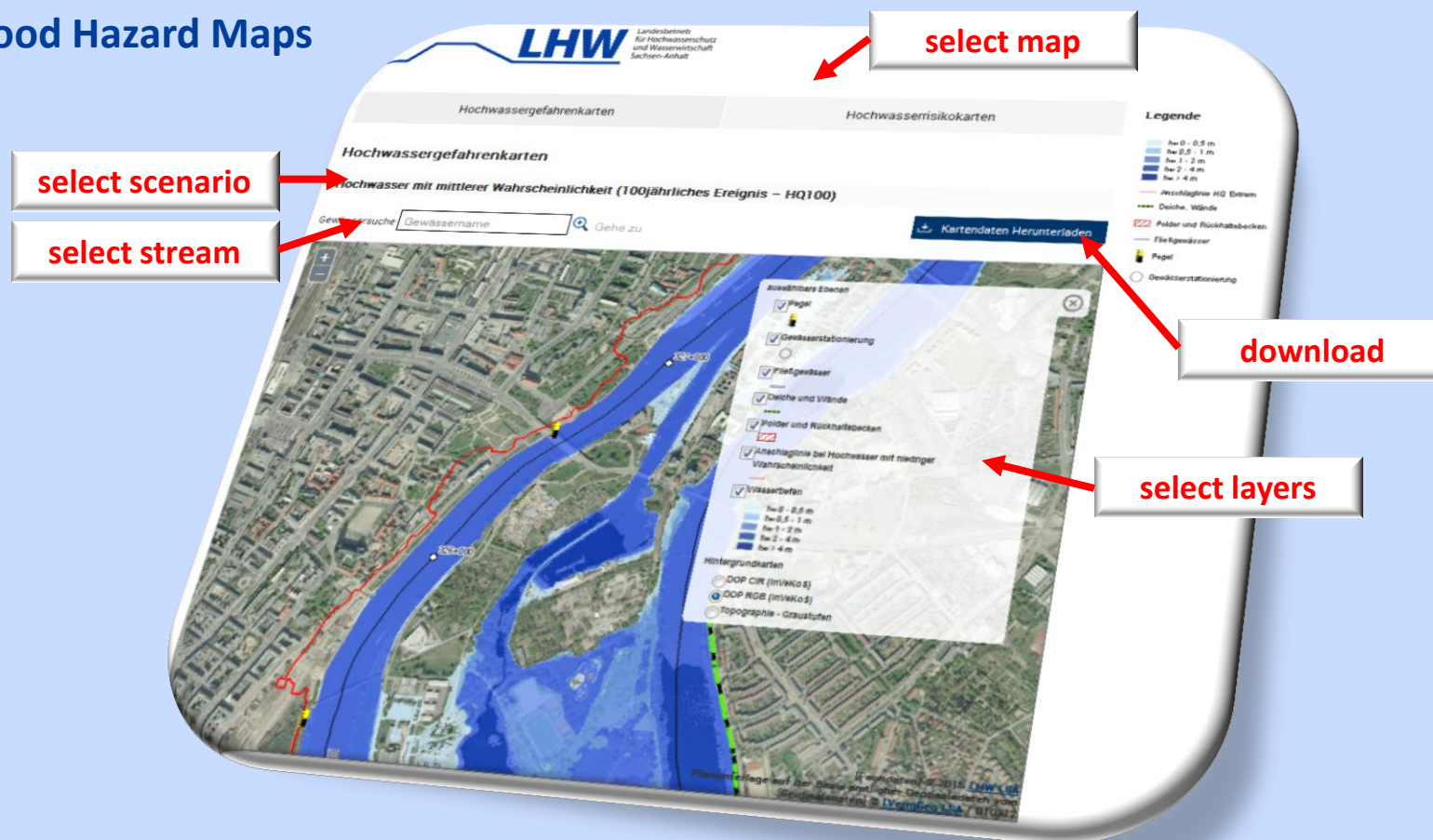
www.hwrmrl.sachsen-anhalt.de



RESULTS of the EFD in Saxony-Anhalt

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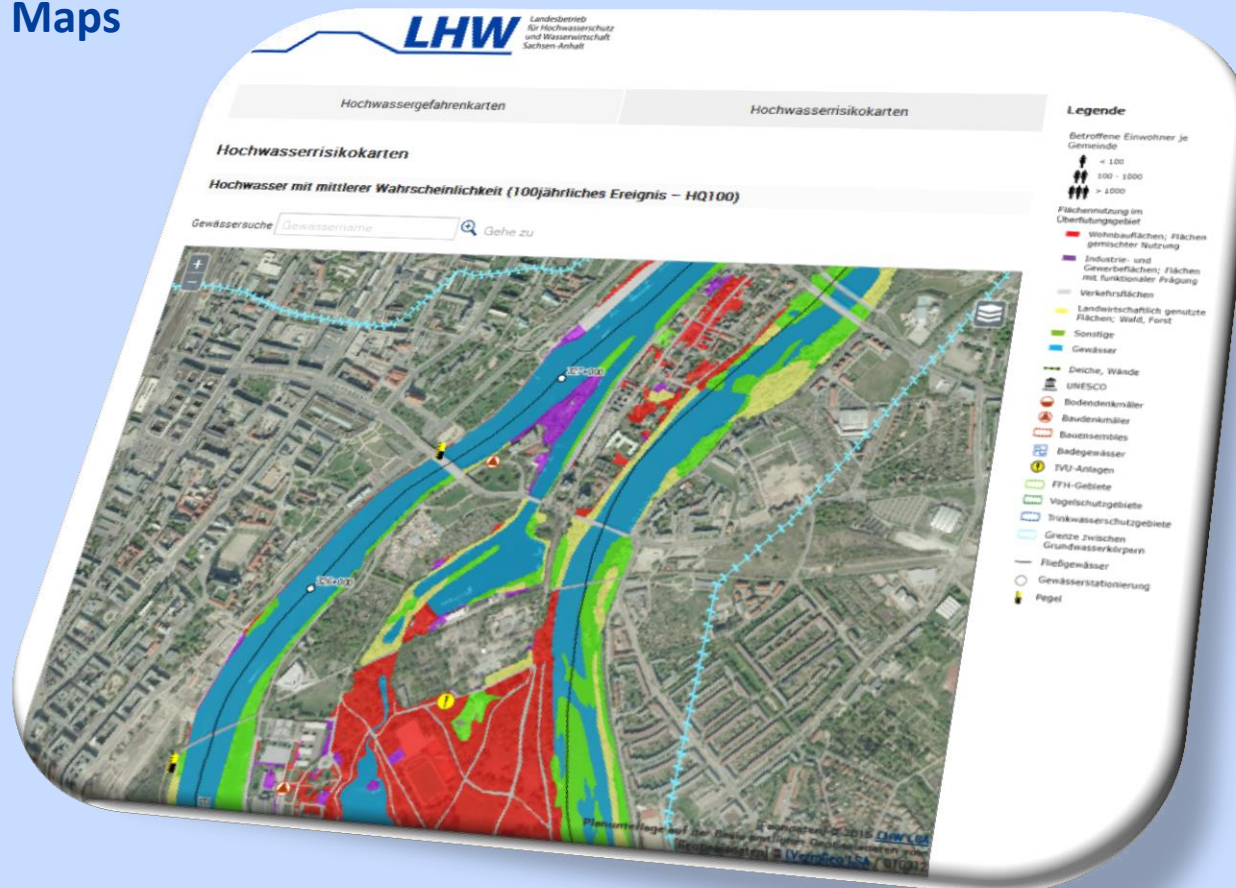
Flood Hazard Maps



RESULTS of the EFD in Saxony-Anhalt

LEVEL 2 - FLOOD HAZARD MAPS AND FLOOD RISK MAPS

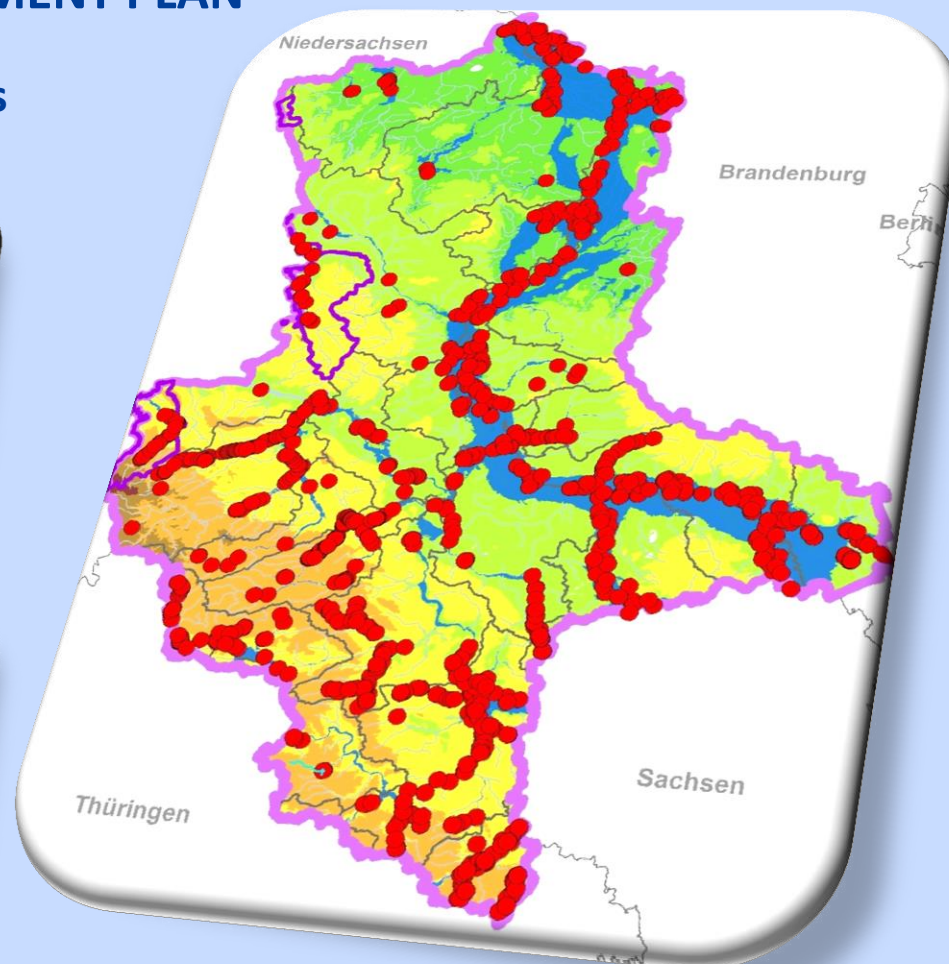
Flood Risk Maps



RESULTS of the EFD in Saxony-Anhalt

LEVEL 3 - FLOOD RISK MANAGEMENT PLAN

more than 1.000 reported measures



FLOOD 2013 – CHALLENGES

LEVEL 3 - FLOOD RISK MANAGEMENT PLAN (FRMP)



Because of the structure and coordination with the Water Framework Directive (WFD) only one FRMP for Elbe catchment area will be established.

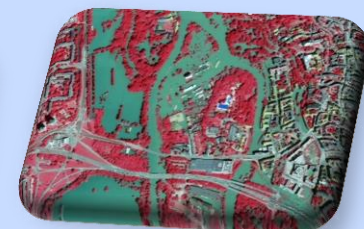
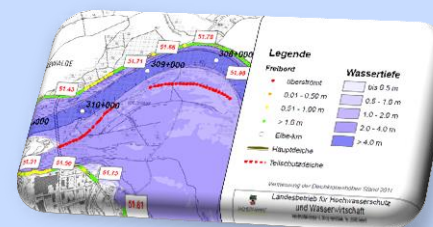
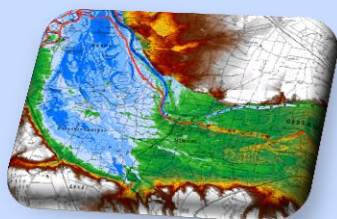
Saxony-Anhalt:

Adaption and realisation of the “FLOOD PROTECTION CONCEPT 2020” as one regional input concerning the EFD.

Information and integration of relevant stakeholders and the general public in all levels during the design of the FRMP.

RESULTS – EXPERIENCES 2013 & EFD

Operational flood management depends directly on the knowledge of the decision makers and their abilities to identify the value of the more and more digital world in combination with pragmatic approaches to create flood defense measures.





Merci de votre attention

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